FIG.1A

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360 180 240 300 88 GCACCAACCATGGCCACGTTTGTGGAGCTCAGTACCAAAGCCAAGATGCCCATTGTGGGC GCCATCCAAGAGATCCAAGAGAGGCTGTGAAGCGGGGGGACCTGTTCATCGTCAGC CTGGGCACTTGGAAGTCTCCTCTCGGCAAAGTGAAAGAAGCAGTGAAGGTGGCCATTGAT GCAGGATATCGGCACATTGACTGTCCTATGTCTATCAGAATGAACATGAAGTGGGGGAA AAGTTGTGGCCCCACTTCCAGATCGAGAAGCTCTTGAACAAACCTGGACTGAAATATAAAC AVKVAID S MATFVELSTKAKMPIVG G Y R H I D C A Y V Y Q N E H E V G E D L F I V æ LGTWKSPLGKVKE A'I Q'E K I Q E K A V K S 2 S K S H Ъ Ц

FIG.1E

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AATTGAGTGATGAGGAGATGGCAACCATACTCAGCTTCAACAGAAACTGGAGGGCCTGTA 720

TCTCCTGGTGAGATTATACAGGAGATTCTTCTTCTTCGCTGAAGTGTGACTACCTCCACT	840
AGGAGATTCTCTTCTTCGCTGAAGTGTGAC	TCC
AGGAGATTCTCTTTCTT	TGTGACTA
AGGAGATTCTCTTTC	PCGCTGAAG
AGGAG7	CTCTTTCT
CTCCTGGTGAGATTATAC	AGGAG7
rcrccrggrg,	AGATTATAC
-	CICCIGGIG

900 CATGICCCATTTTAGCCTATTTAAGAICACAGTGAACTTAGICTCTGTTATAGACG CAGAAAAGCATGGCTTGAATAAGGAAATGACAATTTTTTCCACTTATCTGATCAGAACAA 1020

AGAATCGAGGTGCTGTTTTAGACATTTATTTCTGTATGTTCAACTAGGATCAGAATATCA 960

ATGTTTATTAAGCATCAGAAACTCTGCCAACACTGAGGATGTAAAAGATCAATAAAAAAA 1080

1090

TAATAATCAT

FIG.2A

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240 300 420 480 180 360 117 GCCATCCAAGAGATCCAAGAGAAGGCTGTGAAGCGGGAGGACCTGTTCATCGTCAGC AAGGACCTGAAGCTGAGCTATCTGGACGTCTATCTTATTCACTGGCCACAGGGATTCAAG GCACCAACCATGGCCACGTTTGTGGAGCTCAGTACCAAAGCCAAGATGCCCATTGTGGGC GCAGGATATCGGCACATTGACTGTGCCTATGTCTATCAGAATGAACATGAAGTGGGGGAA AAGTIGIGGCCCACTITCTITGAGAGACCCCTIGIGAGGAAAGCCTITGAGAAGACCTIC CTGGGCACTTGGAAGTCTCCTCTCGGCAAAGTGAAAGAAGCAGTGAAGGTGGCCATTGAT TCTGGGGGATGACCTTTTCCCCCAAAGATGATAAAGGTAATGCCATCGGTGGAAAAGCAACG Ω H G S [L] × DLFIV Н U > K × ы 2 ტ Ø Н × V K V দ্য ىم W P Q G H A Σ G Ŀì × Ø A × 田 떠 Z K × œ H I D C A Y V Y Q æ SYLDVYLI 딥 Z H K A V K P L V × 9 KV လ × П ŋ ~ 띡 Ω [i] ь 口 > × נדי а Ø Ŀ М KI لعا വ H لتا D L K L 又 Y P Н 凹 3 Y Σ Ø 3 Ω ග G 9 Ø S

FIG.2E

54	15	09	17	99	19	72	21	78	23	84	24
TTCTTGGATGCCTGGGAGGCTGGAGGTGGATGAGGGGGCTGGTGAAAGCCCTT 54	A M E E L V D E G L V K A L	GGGGTCTCCAATTTCAGCCACTTCCAGATCGAGAAGCTCTTGAACAAACCTGGACTGAAA 60	H F Q I E K L L N K P G L K	TATAAACCAGTGACTAACCAGGTTGAGTGTCACCCATACCTCACGCAGGAGAAACTGATC 66	Q V E C H P Y L T Q E K L I	CAGTACTGCCACTCCAAGGGCATCACCGTTACGGCCTACAGCCCCCTGGGCTCTCCGGAT 72	GITVTAYSPLGSPD	AGACCTTGGGCCAAGCCCAGAAGACCCTTCCCTGGAGGATCCCCAAGATTAAGGAGATT 78	E D P S L L E D P K I K E I	GCTGCAAAGCACTCCCCAAGTCTGTGACACCAGCACGCATTGTTGAGAACATTCAGGTCT	
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1140	TTATAGACGAGAATCGAGGTGCTGTTTTAGACATTTATTT
1080	ACCTCCACTCATGTCCCATTTTAGCCAAGCTTATTTAAGATCACAGTGAACTTAGTCCTG 1080
1020	GAGGTTGAATCTCCTGGTGAGATTACAGGAGATTCTCTTTCGCTGAAGTGTGTGACT 1020
096	GGGCCTGTAACGTGTTGCAATCCTCTCATTTGGAAGACTATCCCTTCGATGCAGAATATT
0.06	TTGACTTTAAATTGAGTGAGGAGATGGCAACCATACTCAGCTTCAACAGAAACTGGA 900

AGAATATCACAGAAAAGCATGGCTTGAATAAGGAAATGACAATTTTTCCACTTATCTGA 1200

TCAGAACAAATGTTTATTAAGCATCAGAAACTCTGCCAACACTGAGGATGTAAAGATCAA 1260

TAAAAAAATAATAATCAT

CAAAAAACAGCAACAG AAAGCAGGACGTGAG ACTTCTACCTGCTCA CTCAGAATCATTTCT ARLV1: CAAAAACAGCAACAG AAAGCAGGACGTGAG ACTTCTACCTGCTCA CTCAGAATCATTTCT CAAAAACAGCAACAG AAAGCAGGACGTGAG ACTTCTACCTGCTCA CTCAGAATCATTTCT ARLV2 ARL

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GCACCAACCATGGCC ACGTTTGTGGAGCTC AGTACCAAAGCCAAG ATGCCCATTGTGGGC ARLV1 GCACCAACCATGGCC ACGTTTGTGGAGCTC AGTACCAAAGCCAAG ATGCCCATTGTGGGC GCACCAACCATGGCC ACGTTTGTGGAGCTC AGTACCAAAGCCAAG ATGCCCATTGTGGGC ARLV2 ARL

121

ARLV1 CTGGGCACTTGGAAG TCTCCTCTCGGCAAA GTGAAAGAAGCAGTG AAGGTGGCCATTGAT CTGGGCACTTGGAAG TCTCCTCTCGGCAAA GTGAAAGAAGCAGTG AAGGTGGCCATTGAT CTGGGCACTTGGAAG TCTCCTCTCGGCAAA GTGAAAGAAGAGCAGTG AAGGTGGCCATTGAT ARLV2 ARL

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- 	361			420
ARLV1				
ARLV2	ARLV2 AAGGACCTGAAGCTG		AGCTATCTGGACGTC TATCTTATTCACTGG CCACAGGGATTCAAG	CCACAGGGATTCAAG
ARL	AAGGACCTGAAGCTG	AGCTATCTGGACGTC	TATCTTATTCACTGG	CCACAGGGATTCAAG
	421			480
ARLV1				
ARLV2	ARLV2 TCTGGGGATGACCTT	TTCCCCAAAGATGAT	TTCCCCAAAGATGAT AAAGGTAATGCCATC GGTGGAAAAGCAACG	GGTGGAAAAGCAACG
ARL	TCTGGGGATGACCTT	TTCCCCAAAGATGAT	AAAGGTAATGCCATC	GGTGGAAAAGCAACG
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	481			540
ARLV1				
ARLV2	TTCTTGGATGCCTGG	GAGGCCATGGAGGAG	GAGGCCATGGAGGAG CTGGTGGATGAGGGG	CTGGTGAAAGCCCTT
ART	TTCTTGGATGCCTGG	GAGGCCATGGAGGAG	GAGGCCATGGAGGAG CTGGTGGATGAGGGG CTGGTGAAAGCCCTT	CTGGTGAAAGCCCTT

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--CCAGAIC GAGAAGCICTIGAAC AAACCIGGACIGAAA GGGGTCTCCAATTTC AGCCACTTCCAGATC GAGAAGCTCTTGAAC AAACCTGGACTGAAA ARLV2 **ARLV1**

GGGGTCTCCAATTTC AGCCACTTCCAGATC GAGAAGCTCTTGAAC AAACCTGGACTGAAA

ARL

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TATAAACCAGTGACT AACCAGGTTGAGTGT CACCCATACCTCACG CAGGAGAAACTGATC TATAAACCAGTGACT AACCAGGTTGAGTGT CACCCATACCTCACG CAGGAGAAACTGATC TATAAACCAGTGACT AACCAGGTTGAGTGT CACCCATACCTCACG CAGGAGAAACTGATC ARLV1 ARLV2 ARL

661

CAGTACTGCCACTCC AAGGGCATCACCGTT ACGGCCTACAGCCCC CTGGGCTCTCCGGAT ARLV1 CAGTACTGCCACTCC AAGGGCATCACCGTT ACGGCCTACAGCCCC CTGGGCTCTCCGGAT CAGTACTGCCACTCC AAGGGCATCACCGTT ACGGCCTACAGCCCC CTGGGCTCTCCGGAT ARLV2 ARL

FIG.3E

	721			780
ARLV1	ARLV1 AGACCTTGGGCCAAG CCAGAAGACCCTTCC CTGCTGGAGGATCCC AAGATTAAGGAGATT	CCAGAAGACCCTTCC	CTGCTGGAGGATCCC	AAGATTAAGGAGATT
ARLV2	ARLV2 AGACCTTGGGCCAAG CCAGAAGACCCTTCC CTGCTGGAGGATCCC AAGATTAAGGAGATT	CCAGAAGACCCTTCC	CTGCTGGAGGATCCC	AAGATTAAGGAGATT
ARL	AGACCTTGGGCCAAG	CCAGAAGACCCTTCC	AGACCTTGGGCCAAG CCAGAAGACCCTTCC CTGCTGGAGGATCCC AAGATTAAGGAGATT	AAGATTAAGGAGATT

840 GCTGCAAAGCACAAA AAAACCGCAGCCCAG GTTCTGATCCGTTTC CATATCCAGAGAAT ARLV1 GCTGCAAAGCACAAA AAAACCGCAGCCCAG GTTCTGATCCGTTTC CATATCCAGAGGAAT GCTGCAAAGCAC---781 ARLV2 ARL

900 ARLV1 GTGATTGTCATCCCC AAGTCTGTGACACCA GCACGCATTGTTGAG AACATTCAGGTCTTT ------TCCCC AAGTCTGTGACACCA GCACGCATTGTTGAG AACATTCAGGTCTTT GIGATIGICATCCCC AAGICIGIGACACCA GCACGCATIGITGAG AACATICAGGICTIT 841 ARLV2 ARL

960

ARLV1 GACTTTAAATTGAGT GATGAGGAGATGGCA ACCATACTCAGCTTC AACAGAAACTGGAGG **AACAGAAACTGGAGG** GATGAGGAGATGGCA ACCATACTCAGCTTC GACTTTAAATTGAGT ARLV2

GACTITAAATIGAGI GAIGAGGAGAIGGCA ACCAIACICAGCIIC AACAGAAACIGGAGG ARL

1020 961 ARLV1 GCCTGTAACGTGTTG CAATCCTCTTTTG GAAGACTATCCCTTC GATGCAGAATATTGA ARLV2 GCCTGTAACGTGTTG CAATCCTCTTTTG GAAGACTATCCCTTC GATGCAGATATTGA GCCTGTAACGTGTTG CAATCCTCTCATTTG GAAGACTATCCCTTC GATGCAGAATATTGA ARL

1080 1021 GGTTGAATCTCCTGG TGAGATTATACAGGA GATTCTTTCTTCG CTGAAGTGTGACTAC TGAGATTATACAGGA GATTCTTCTTCG CTGAAGTGTGACTAC GGTTGAATCTCCTGG TGAGATTATACAGGA GATTCTTCTTTCG CTGAAGTGTGACTAC GGTTGAATCTCCTGG **ARLV1** ARLV2 ARL

FIG.3G

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CTCCACTCATGTCCC ATTTTAGCCAAGCTT ATTTAAGATCACAGT GAACTTAGTCCTGTT CICCACICATGICCC ATITIAGCCAAGCIT ATITAAGAICACAGI GAACITAGICCIGIT CICCACICAIGICCC AITITAGCCAAGCII AITIAAGAICACAGI GAACIIAGICCIGII **ARLV1** ARLV2 ARL

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ATAGACGAGAATCGA GGTGCTGTTTTAGAC ATTTATTTCTGTATG TTCAACTAGGATCAG ATAGACGAGAATCGA GGTGCTGTTTAGAC ATTTATTTCTGTATG TTCAACTAGGATCAG ATAGACGAGAATCGA GGTGCTGTTTTAGAC ATTTATTTCTGTATG TTCAACTAGGATCAG ARLV1 ARLV2 ARL

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ARLV1 AATATCACAGAAAAG CATGGCTTGAATAAG GAAATGACAATTTTT TCCACTTATCTGATC AATAICACAGAAAAG CAIGGCIIGAATAAG GAAAIGACAATITIT ICCACIIAICIGAIC TCCACTTATCTGATC AATATCACAGAAAAG CATGGCTTGAATAAG GAAATGACAATTTTT ARLV2 ARL

ARLV1 AGAACAAATGTTTAT TAAGCATCAGAAACT CTGCCAACACTGAGG ATGTAAAGATCAATA ARLV2 AGAACAAATGTTTAT TAAGCATCAGAAACT CTGCCAACACTGAGG ATGTAAAGATCAATA AGAACAAATGTTTAT TAAGCATCAGAAACT CTGCCAACACTGAGG ATGTAAAGATCAATA

1321

1090	1279	1337
AT	AT	AT
AAAAAATAATC	AAAAAATAATC	AAAAAATAATAATC AT
ARLV1	ARLV2	ARL

VGLGTWKSPLGKVKE AVKVAIDAGYRHIDC AYVYQNEHEVGEAIQ	VGLGTWKSPLGKVKE AVKVAIDAGYRHIDC AYVYQNEHEVGEAIQ	VGLGTWKSPLGKVKE AVKVAIDAGYRHIDC AYVYQNEHEVGEAIQ	120		VSKLWPTFFERPLVR KAFEKTLKDLKLSYL DVYLIHWPQGFKSGD
AVKVAID	AVKVAID	AVKVAID		1	KAFEKTL
VGLGTWKSPLGKVKE	VGLGTWKSPLGKVKE	VGLGTWKSPLGKVKE		VSKLWPT	VSKLWPTFFERPLVR
ARLVI MATFVELSTKAKMPI	ARLV2 MATFVELSTKAKMPI	MATFVELSTKAKMPI	61	EKIQEKAVKREDLFI	ARLV2 EKIQEKAVKREDLFI
ARLV1	ARLV2	ARL		ARLV1	ARLV2

EKIQEKAVKREDLFI VSKLWPTFFERPLVR KAFEKTLKDLKLSYL DVYLIHWPQGFKSGD

ARL

180

ARLV2 DLFPKDDKGNAIGGK ATFLDAWEAMEELVD EGLVKALGVSNFSHF QIEKLLNKPGLKYKP **QIEKLLNKPGLKYKP** DLFPKDDKGNAIGGK ATFLDAWEAMEELVD EGLVKALGVSNFSHF **ARLV1** ARL

	181			240
ARLV1				
ARLV2	ARLV2 VTNQVECHPYLTQEK	LIQYCHSKGITVTAY	SPLGSPDRPWAKPED	PSLLEDPKIKEIAAK
ARL	VTNQVECHPYLTQEK	LIQYCHSKGITVTAY	SPLGSPDRPWAKPED	PSLLEDPKIKEIAAK
	241			008
ARLV1				
ARLV2 H	HH			
ARL	HKKTAAQVLIRFHIQ	RNVIVIPKSVTPARI	VENIQVEDFKLSDEE	MATILSFNRNWRACN
•				
N =	301			
ARLV1		-SRSRSS 88		
ARLV2		-SPSL 245		
ARL	VLQSSHLEDYPFDAE	Y 316		